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Atty. Dkt. No. 043034-0158

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Hidehito KUBO
Title: LOAD BALANCING METHOD
AND SYSTEM BASED ON
ESTIMATED ELONGATION
RATES
Appl. No.: 09/680,517
Filing Date: 10/6/2000
Examiner: G. L. Opie
Art Unit: 2126

<p>CERTIFICATE OF MAILING I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date below.</p> <p>Ruthie Vallejo (Printed Name)</p> <p><i>Ruthie Vallejo</i> (Signature)</p> <p>August 11, 2004 (Date of Deposit)</p>
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INFORMATION DISCLOSURE STATEMENT
UNDER 37 CFR §1.56

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith on Form PTO/SB/08 is a listing of documents known to Applicant in order to comply with Applicant's duty of disclosure pursuant to 37 CFR §1.56. A copy of each listed document is being submitted to comply with the provisions of 37 CFR §1.97 and §1.98.

The submission of any document herewith, which is not a statutory bar, is not intended as an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicant does not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document which is determined to be a *prima facie* art reference against the claims of the present application.

TIMING OF THE DISCLOSURE

The listed documents are being submitted in compliance with 37 CFR §1.97(c), before the mailing date of either a final action under 37 CFR §1.113, a notice of allowance under 37 CFR §1.311, or an action that otherwise closes prosecution in the application.

RELEVANCE OF EACH DOCUMENT

The relevance of the foreign-language documents is described in the present specification. An English translation of the foreign-language documents is not readily available. However, the absence of such translation does not relieve the PTO from its duty to consider the submitted foreign language documents (37 CFR §1.98 and MPEP §609).

Applicant respectfully requests that any listed document be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO/SB/08 be returned in accordance with MPEP §609.

The Examiner in the corresponding Japanese application commented as follows:

<List of Publications>

- ref 1.* Nariyoshi Yamai, "Design and Packaging of a Command Unit Load Distribution Function in UNIX," Journal of the Institute of Electronics, Information, and Communication Engineers, Vol. J77-D-I, No. 7, pp. 483 – 492, The Institute of Electronics, Information, and Communication Engineers, Ltd, 7/25/1994 (CS-NG-1998-01006-003)
- ref 2.* Japanese Unexamined Patent Application Publication H10-240697
- ref 3.* Susumu Tsuruda, "Dynamic Distributed Processing Systems Using Load Forecasting, and the Evaluation Thereof," Research Reports of the Institute of Electronics, Information, and Communication Engineers, Vol. 96, No. 95, pp. 25 – 32, COMP96-19, The Institute of Electronics Information, and Communications Engineers, Ltd., 6/14/1996 (CS-NG-1998-00585-004)

(Claims) 1, 2, 4, 11, 12, 14 and 21 – 23

(Publications) 1

(Remarks)

Publication 1, referencing, in particular, line 8 on the right-hand side of page 485 through line 26 on the left-hand side of page 486, describes an invention, as a computer selection means when performing remote execution after selecting the computer with the minimum calculation load, out of multiple computers, when inputting commands, the selection of the computer that has the smallest calculated value when calculating the value obtained through a formula, as shown in Equation (3) by dividing the average response time for a command (the average time required from startup through completion, including overhead) calculated as the average load for the computer, by the average execution time (excluding overhead) when the command is run by itself.

Comparing the inventions according to Claims 1, 2, 4, 11, 12, 14, and 21 – 23 of the present invention to the inventions described in Publication 1, the equation value indicated by the equation (3) in the invention described in Publication 1 corresponds to the “estimated growth rate” of the inventions according to Claims 1, 2, 4, 11, 12, 14, and 21 – 23, and thus no particular differences are recognized between the two.

(Claims) 3 and 13
(Publications) 1 and 2
(Remarks)

Although in Publication 1 there is a description about the current number of transactions in process, Publication 2, referencing paragraph 0008 in particular, describes an invention that is used, in devices that perform load distribution through assigning transactions to multiple processing devices, when calculated values that indicate the current loads of the number of sessions wherein transactions are currently in progress (of the multiple sessions of the various processing devices) apply to the various processing devices, where this corresponds to the determination of the allocation to the various computers based on the current number of transactions in process, [as is found] in the inventions according to Claims 3 and 13 of the present application.

Furthermore, the inventions described in Publications 1 and 2 belong to the same field of technology, that of performing load distribution through assigning processes to multiple computers, and thus the application of the technology described in Publication 2 to the invention described in Publication 1 to produce the inventions according to Claims 3 and 13 of the present application could have been arrived at easily by one skilled in the art.

(Claims) 5 and 15
(Publications) 1 and 2
(Remarks)

The inventions according to Claims 5 and 15 of the present application are not clear, as described below (Reason 2); however, there is no clear distinction between the “number of transactions in the process” and the “number of task processes in the CPU system,” and because either of these could be understood to be the number of sessions currently used by transactions in the various processing devices, the inventions according to Claims 5 and 15 of the present application could have been invented easily by one skilled in the art based on the inventions described in Publications 1 and 2, as was the case for the inventions according to Claims 3 and 13 of the present application.

(Claims) 6, 16 and 24 – 26
(Publications) 1 and 2
(Remarks)

The load average of the computers in the inventions described in Publication 1 correspond to the “CPU use rate” of the inventions according to Claims 6, 16, and 24 – 26 in the present application, and thus the inventions according to Claims 6, 16, and 24 – 26 of the present application could have been invented easily by the one skilled in the art based on the inventions described in Publications 1 and 2.

(Claims) 7 and 17
(Publications) 1 and 3
(Remarks)

The section “4.1: Linear Projection Model” on the left-hand side of page 29, in particular, in Publication 3 describes an invention, in a dynamic distributed processing system that uses load prediction and that calculates the expectation for a prediction load value in the

Furthermore, the inventions described in Publications 1 – 3 belong to the same field of technology, that being the performance of load distribution through assignments of processes to multiple computers, and thus the application of the technology described in Publication 3 to the invention described in Publication 1 to produce the inventions according to Claims 7 and 17 of the present application could have been envisioned easily by one skilled in the art.

In the inventions according to Claims 8 and 18 of the present application, the use of data for the estimated load conditions, obtained in advance, to perform corrections when using the aforementioned current number of transactions in process, when calculating the estimated growth rates of processing times is not particularly different than calculating the estimated growth rates using both the estimated load status data and the number of transactions currently in process, and thus the inventions according to Claim 8 and Claim 18 of the current application could have been invented easily by one skilled in the art based on the inventions described in Publications 1 and 2.

In the inventions according to Claims 9 and 19 of the present application, it is only natural that the index that indicates the loads on the computers is proportional to the number of transactions currently in process in said computers, and it would be easy for one skilled in the art to envision using, as a load index, the product of multiplying the number of transactions in process by some factor, and thus the inventions according to Claims 9 and 19 of the present application could have been invented easily by one skilled in the art based on the inventions described in Publications 1 and 2.

In the inventions according to Claims 10 and 20 of the present application, the total estimated growth rate is one of the values that indicates the loads on the computer, and because, when performing load distribution through assigning processes, selecting as the computer to which to make the assignment the computer wherein the increase in the value that indicates a [total] load after the process has been assigned is that which is performed commonly, and thus the inventions according to Claims 10 and 20 of the present application could have been invented easily by one skilled in the art based on the inventions described in Publications 1 and 2.

ref 4 1. Japanese Unexamined Patent Application Publication H9-212467
ref 5 2. Japanese Unexamined Patent Application Publication H6-243112

- ref 6* 3. Japanese Unexamined Patent Application Publication H11-39340
ref 7 4. Japanese Unexamined Patent Application Publication H11-15799
ref 8 5. Japanese Unexamined Patent Application Publication H10-11407
ref 9 6. Japanese Unexamined Patent Application Publication S57-757
7. Japanese Unexamined Patent Application Publication H10-312365 (Referenced in the Specification of the current application)
8. Japanese Unexamined Patent Application Publication H10-27168 (Referenced in the Specification of the current application)
9. Japanese Unexamined Patent Application Publication H7-302242 (Referenced in the Specification of the current application)
[The three references above are] already filed.

This Record of Prior Art Literature Search Results does not constitute a reason for rejection.

STATEMENT

The undersigned hereby states in accordance with 37 CFR §1.97(e)(1) that each item of information contained in this information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three (3) months prior to filing of this Statement.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 CFR §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

Respectfully submitted,

Date

8-11-04

By

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Substitute for form 1449B/PTO

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

Date Submitted: August 11, 2004

Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known

Application Number	09/680,517
Filing Date	10/6/2000
First Named Inventor	Hidehito KUBO
Group Art Unit	2126
Examiner Name	G. L. Opie
Attorney Docket Number	043034-0158

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Documents	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Office ³	Number ⁴	Kind Code ⁵ (if known)				
	A1		H10-240697	A	Hitachi LTD	09/11/1998		
	A2		H9-212467	A	Fujitsu LTD	08/15/1997		
	A3		H6-243112		Seuji Epson Corporation	09/02/1994		
	A4		H11-39340	A	NTT Data Tsushin KK	02/12/1999		
	A5		H11-15799	A	Hitachi LTD	01/22/1999		
	A6		H10-11407	A	Matsushita Electric Works, Ltd.	01/16/1998		
	A7		S57-757		Hitachi LTD	01/5/1982		

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁶
	A8	Nariyoshi Yamai, "Design and Packaging of a Command Unit Load Distribution Function in UNIX," Journal of the Institute of Electronics, Information, and Communication Engineers, Vol. J77-D-I, No. 7, pp. 483 - 492, The Institute of Electronics, Information, and Communication Engineers, Ltd, 7/25/1994 (CS-NG-1998-01006-003)	
	A9	Susumu Tsuruda, "Dynamic Distributed Processing Systems Using Load Forecasting, and the Evaluation Thereof," Research Reports of the Institute of Electronics, Information, and Communication Engineers, Vol. 96, No. 95, pp. 25 - 32, COMP96-19, The Institute of Electronics Information, and Communications Engineers, Ltd., 6/14/1996 (CS-NG-1998-00585-004)	

Examiner
SignatureDate
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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